GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, MAY 21, 1890.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—The Management of Our Experiment Stations.—The Proposed Speed-road in Central Park . . . 245
The Cork Oak. (Illustrated.) . . . 246
The Cedar of Mount Atlas . . . *H. Christ.* 246
NEW OR LITTLE KNOWN PLANTS:—Berberis Sieboldii. (With figure.) . . . *C. S. S.* 248
CULTURAL DEPARTMENT:—Notes on Shrubs . . . *J. G. Jack.* 248
Notes on Hardy Plants . . . *F. H. Horsford.* 250
Hardy Plants for Cut Flowers.—V . . . *E. O. Orpet.* 250
Stove Plants . . . *W. H. Taplin.* 252
Orchid Notes . . . *F. Atkins, A. Dimmock.* 252
Fritillaria armæna . . . *M. Barker.* 252
Transplanting . . . *W. H. Bull.* 253
Little Known Vegetables . . . *Professor E. S. Goff.* 253
Under the Roses . . . *W. G.* 253
Iris Gatesii . . . *Max Leichtlin.* 253
RECENT PUBLICATIONS:—Forestry in North America.—III. . . . *Sir Dietrich Brandis.* 253
CORRESPONDENCE:—Grapes for Home Use . . . *E. Williams.* 255
Durability of Fence Posts . . . *B.* 255
Plant Problems . . . *W. E. Hill.* 255
RECENT PLANT PORTRAITS . . . 255
NOTES . . . 255
ILLUSTRATIONS:—Berberis Sieboldii, Fig. 38 . . . 249
The Cork Oak in Algeria . . . 251

The Management of our Experiment Stations.

THE Agricultural Experiment Stations recently established in the various states have been subjected to much flippant criticism by persons who have no adequate idea of their purposes and possible value. We recall one instance of a most instructive feeding experiment at one of these stations in which tests of certain food-rations were made to ascertain their comparative efficacy in the production of milk. The work in this case was in every way a suitable one for such an institution. The facts established could be at once put to practical use by dairymen, and could be made directly profitable in their business. The tests were such as dairymen could not make for themselves, because they required a technical knowledge and a habit of scientific accuracy in observation and measurement to which ordinary farmers do not pretend. Besides this the experiment required time and money which the farmer could not afford to expend and an equipment in the way of apparatus which he did not possess. Every one familiar with such subjects knows that investigations of this sort have done much to improve the dairy practice of the country and to secure a cheaper and better product. And yet the bulletin setting forth the results of the experiment spoken of was ridiculed in more than one of our great city dailies, the writers making themselves particularly merry over the fact that the cows treated were referred to, as is usual in such cases, by their names. Of course criticism like this is entirely empty, but it is annoying by its very silliness. It certainly is not pleasant for men engaged in serious, honest and useful work to find themselves mocked and jeered at and made the butt of vulgar jokes.

Quite as annoying, and almost as senseless, are the strictures of persons who expect too much of the stations. They complain because immediate answers are not given to questions which demand years of patient study. One man wonders why so much time is given to the investigation of the Sweet Potato disease, when he is anxious to know the exact effect of potash salts upon the sugar content of the grape. Another complains because all the new varieties of fruits and vegetables are not subjected to comparative tests, while a third objects to such experiments as worthless for other soils and climates than those of the station farm, and urges the officers to confine themselves to the investigation of principles which demand the oversight of men trained to scientific method, and leave minor details of practice like the testing of strawberries and tomatoes to individual growers, who are fully competent to decide such matters for themselves. Here we approach debatable ground, and the stations must be able to show not only that they are prosecuting their inquiries on the most approved methods, but that they have selected the proper subjects for investigation. They must be able, too, to state the principles which control this selection, and give the reason why their chosen field of study is made to include certain definite subjects, and why it excludes every other subject. Every competent station officer will welcome honest and kindly criticism which touches the vital principles upon which these organizations must stand or fall, and every such officer will admit that in matters of mere administration they should always be subject to closest scrutiny.

The stations can afford to overlook captious criticism, but they should be quick to profit by any warning or reproof from a friendly quarter, and the editorial article in the April number of *Agricultural Science* should, therefore, receive special consideration. The editor, who is Vice-Director of the Experiment Station of the Indiana Agricultural College, here charges or insinuates that, in many cases, the law which requires the quarterly issue of bulletins is not complied with; that in some states the appropriation for the station is expended in violation of the spirit and letter of the law; that, in certain cases, the money intended for the stations is largely expended upon the colleges; that the Director of one or more stations is a mere figure-head; that the work done in some stations is only scientific in name, while in reality it is a bungling farce. Now, we cannot identify the stations at which these comments are leveled, but we should be surprised if a Congressional investigation could not make out as strong a case against many of them. Even in the states where the most intelligent interest is taken in the stations it is very difficult to secure men properly trained to do the work required. There are not enough available men of this quality in the country; and in states where little attention has been given to the aid which can be rendered by science to horticulture and to agriculture, it is not improbable that the station-work has been entrusted to very incompetent hands. And, no doubt, it is true that in some cases, where a good director has been chosen, his choice of assistants has been hampered by the interference of local statesmen, who are too often eager to seize upon any position with a salary for some dependent politician. Upon the whole, the wonder is that so many of the stations are as good as they are.

And yet they must be a great deal better than they are if they are finally to escape the charge of misusing the liberal appropriation at their disposal. In the colleges and in the stations themselves a staff of young men should be under constant training, and the excuse that it is impossible to find men competent to do the work of the stations ought not to be a valid one much longer. There is an association made up of the officers of the agricultural colleges and of the stations, and it would seem to be worth while for this body to make a searching inquiry into the condition of the institutions it represents. The shortcomings of a few stations will discredit all. And it should be remembered, too, that the stations will not satisfy the reasonable demands of the people who are taxed for their support if they simply refrain from violating law and live up to the letter of their obligations. They must prove themselves positive and efficient forces in horticultural and agricultural progress. Unless they compel

respect they are failures. They will not be pronounced successful until their bulletins are accepted as standard and authoritative in the literature of applied science.

IN the closing hours of the legislative session at Albany, an effort was made to smuggle through, in the form of an Amendment to another Act, a law authorizing the construction of a straight and level speed-road through Central Park. The measure was again defeated, for this was not the first attempt to pass it; but it will surely reappear before succeeding legislatures, among the various schemes to confiscate the grounds belonging to the people in the interest of a special class. This particular project, however, is a singularly offensive one. Even if the track could be constructed without interfering with the right of entrance to the park by those who would be compelled to cross it, its purpose is simply to afford pleasure to a few rich men for a short time in the spring and in the fall. To accomplish this, these men are asking the people to pay for the devastation of the scenery of the park, which is its fundamental value—scenery which it has cost millions of money and the watchful care of long years to provide. No other attack on the park contemplates the destruction of so large a portion of its area or the introduction of so many elements that are subversive of its design and purpose. These owners of fast horses have little need of the park, even if they have any feeling for its beauties, because they are able to enjoy the sunshine of the south in winter, and the cool breezes of the Berkshire Hills or of the seaside in summer. But the city is full of people who may have less money, but who have quite as much right to the use of the park and a more refined appreciation of its value. The park should be preserved for the people, and the whole people, and not ruined in the interest of horses and their drivers, however aristocratic may be the breeding of either.

The Cork Oak.

THE Cork Oak, of which a portrait taken in Algeria appears in our illustration on page 251, produces the most valuable bark of all trees, with perhaps the exception of the Cinchona, and the money value of the world's product of cork is greater than that of the quinine it consumes. It is a native of the Mediterranean basin in northern Africa, in Corsica, Sicily, southern France and the Iberian peninsula, across which it extends to the shores of the Atlantic in Portugal and of the Bay of Biscay. It is an evergreen species very much resembling some varieties of the Ilex or Evergreen Oak of southern Europe, with ovate-oblong blunt coriaceous leaves, which are sometimes entire and sometimes sharply serrate, and downy on the lower surface. It rarely attains a greater height than twenty-five or thirty feet and trunks more than two feet in diameter are exceptional. The value of the tree is in its bark. The outer layer becomes, through annual additions on the inner surface, after the tree has attained a certain age and size, a thick, soft, homogeneous mass possessing the compressible and elastic properties upon which its economic value depends. Cork is, in a certain sense, an artificial production, as the bark naturally developed by the trees is of comparatively little value. This last is called "Virgin Cork," and is stripped from the trees when they are from fifteen to twenty years old. It is rough and woody in texture and is only valuable as a tanning material or for the coarsest kinds of rustic work. The removal, however, of the natural bark causes the development of another growth of much finer and more compact quality. This is removed every eight or ten years, the quality of cork improving with each successive stripping, and the trees continuing to live and thrive under the operation for more than a hundred years. The bark is stripped during the months of July and August. Two cuts are made around the stem, the first above the ground and the second directly under the forking of the main branches. These cuts are then connected by three or four longitudinal incisions which thus divide the bark of the whole trunk into as many divisions. Only the outer coating can be removed without destroying the tree, and the greatest care is taken therefore not to injure the inner bark. The cork is removed with the aid of the wedge-shaped handle of the tool used in making the incisions. The outer surface of the bark, as soon as it is stripped from the trees, is scraped and cleaned, and the pieces are then flattened, heated slightly and pressed under stones on a flat surface. The heating chars the surface and closes the pores, giving to the bark what is technically called "nerve." In this state it is ready for manufacture or exportation.

The amount of cork used in the world and the number of uses for it are increasing enormously. It was not until the end of the seventeenth century that bottles were stopped with corks, although it would seem that its value for this purpose was known to the Romans, as Horace ("Odes," III, 8) speaks of

> "Corticem adstrictum pice dimovebit
> Amphoræ."

The available forests of Cork-trees are already relatively extensive, although hardly sufficient to supply the demands now made on them, or which as the world grows in prosperity must be made on them, for there is hardly any end to the uses for cork, and none of the substitutes for it which have yet been tried are very satisfactory or promise to take its place to any great extent. The latest estimates of existing areas of available Cork Oak forests make their extent from 3,300,000 to 3,500,000 acres, of which about one-half, including those on its African possessions, belongs to France.*

The wood of the Cork Oak is heavy, coarse-grained, and of a yellow-brown color; it shrinks and warps badly in seasoning and decays rapidly when exposed to the action of the atmosphere. It has little value in the arts but furnishes a useful fuel and makes good charcoal. The inner bark is rich in tannin and trees too old or unfit to produce cork are cut for the sake of the inner bark.

The Cork Oak is an interesting tree to Americans, as its cultivation now seems destined to become an important industry in California, where the climate and the soil in many parts of the state are admirably suited to produce it. This is not a mere theory, as trees have been growing now for several years in California and have already produced crops of cork of excellent quality. It is probable that the tree will grow rather more rapidly in California than it does in its native country, although the quality of the soil, the exposure in which the trees are placed, local climate and the treatment which the trees receive will influence, of course, the rapidity with which the bark is developed. In Africa it is found that the trees which grow the most rapidly produce bark of the poorest quality, and that within certain limits the slower the trees grow the more valuable the product, provided the growth is not too slow, in which case the bark loses some of the elasticity which makes it valuable. The conditions which influence the development of cork are so numerous and complicated that the product of all the trees in a grove or forest can never attain the same uniformity of thickness or quality in any given time. This is so well understood in the countries where cork is grown that the best method of harvesting has been found to be to go over the forest every two or three years and remove the bark from such trees as are covered with merchantable cork and not to strip all the trees at the same time. All these matters must of course be considered in connection with planting forests of the Cork Oak in California. The planting and care of such forests in Portugal and Spain has long been an important industry, and there is no reason why they may not be made so in California, where the local consumption of cork is already enormous, although the wine industry there is hardly more than in its infancy.

We are indebted to Mr. Francis Skinner, of Boston, for the photograph from which the illustration of the Algerian tree has been made.

The Cedar of Mount Atlas.

THE classical Cedar of antiquity has, it is well known, become exceedingly rare on Mount Lebanon, where it exists, outside of the famous grove of about 350 trees, in a few remote and rarely visited stations only. There is nothing more beautiful or more venerable than the little forest of Cedars standing out dark and green on the naked and forbidding background of the high Lebanon range. Each tree, with its original and expressive aspect, seems to relate a history full of memories. But this famous grove of Cedars leaves upon the visitor a sad impression, for no one who sees it can divest himself of the idea that the venerable trees are perishing. The nine old trees are mutilated and injured less by time and the severity of the climate than by the carelessness of shepherds and pilgrims, who break off the branches and often

* "Notice sur les fôrets de la Tunisie," Exposition Universalle de 1889, Tunise. Direction des Fôrçts.

build fires about the trees; and, what is still more serious, young plants are not growing up, as the goats destroy them as soon as they appear.

If the student of the Bible deplores the approaching loss of these, the most touching monuments of antiquity, the botanist and the forester may find at least this consolation, that the Cedar is found on other mountain ranges, so that a speedy extermination of the race is not probable. Vast forests of the true Cedar of Lebanon exist, at an elevation of from 4,000 to 6,000 feet, on the immense masses of mountains which extend all along the coast of Cilicia. It was Kotschy who discovered and described these great forests of Cedars (see his charming work entitled "A Journey to the Taurus of Cilicia," published in 1858). In reality, the station of the Cedar on Mount Lebanon is only the most southern outpost of the species, while the centre of its distribution and its real home is in Cilicia, where it is found in the greatest abundance, and where it reproduces itself vigorously. But to really comprehend the geographical distribution of this splendid tree one must look to the western and the driest part of the Himalaya Mountains, where is found that conifer known from the time of the most ancient Indian antiquity under the name of "Deodar" or "Wood of the Gods," the *Cedrus Deodara* of botanists. It is not surprising that this wonderful plant has been mistaken for a distinct species. It is a much larger tree, and its habit, although not unlike that of the Cedar of Lebanon, differs from it in its slender young shoots and in its larger and longer cones. In the opposite direction, another tree, very much like the Cedar of Lebanon, has been discovered in the Atlas Mountains of Algeria; but in the case of this tree all its parts are smaller than those of the tree of Mount Lebanon. The more the mountain chains, which extend from the frontier of Tunis in a double rank through northern Africa to the boundary of Morocco, are explored, the more widely distributed this beautiful tree is found to be. Manetti has given to the African Cedar the name of *Cedrus Atlantica*, but a critical study of these three trees has shown Sir Joseph Hooker that they are not really three species, but simply three varieties, or rather races, of the same species, as it is principally the dimensions of individuals, and not essential differences, which distinguish them.

The race of the Himalaya, in conformity with the immensity of that mountain system, where all vegetable forms assume an extraordinary size, is the largest. The race of the Taurus and of the Lebanon occupies an intermediate position, while that of Mount Atlas is the smallest, on account of the dryness of the severe climate of the region. The remarkable dimorphism, even, which appears among trees with dark green foliage, and others with silvery gray foliage mixed together in the same wood, is found in these three stations, in the Himalaya as in the Taurus and in the mountains of Blidah. This dimorphism is known to gardeners, as it is seen frequently in cultivated plants of the three varieties now widely distributed in the gardens of southern Europe.

I had the good fortune, in a recent journey, to penetrate to the region occupied by the African Cedar and to cross it at different points, and it seems to me that it might be interesting for the readers in the New World to learn a few details of a plant of the Old World which every reader of the Bible knows and has venerated from childhood. I need not recall the fact that it is the tree celebrated by Isaiah, and by David in the Psalms, that it is the tree that Solomon used for the construction of the temple, and Ezra used to finish the second temple; the tree which David used to build his palace, and which served the Hebrews for the masts to their vessels, and for the idols which this people, so often rebellious, erected, and which attracted to them the paternal punishments of God. I will merely add, however, that there are learned and competent students who suspect, at least, that in one or the other of the references of the Bible there is room for doubt, and that they do not refer to the true Cedar, but rather to the wood of the Cypress (*Cupressus sempervirens*). Indeed the wood of this tree, which still inhabits the valleys of the Lebanon in the immediate neighborhood of the Cedars, as in the valley of Kadischa, forming there dense forests, is more valuable than that of the Cedar both for construction and for the cabinet-maker. The wood of the true Cedar is whitish, rather soft, not very durable, and not odoriferous, while that of the Cypress is very hard, durable, very resinous, and of a handsome brown color, and in every way superior to that of the other tree.

I saw the Cedar for the first time in the Atlas of Beni Salah, which forms the principal part of the chain immediately behind the pretty town of Blidah, which is surrounded as far as the eye can reach by forests of Orange-trees, whence come in the months of December and January mandarins, which are now beginning to take the place of all other varieties of the Orange.

We ascend with the aid of mules and Arab guides behind the town during five hours—for it is necessary in order to visit the Cedars to reach an elevation of nearly 2,000 feet, while Blidah is only a few feet above the level of the sea. We pass through Arab fields surrounded with masses of Cactus (*Opuntia Ficus-Indica*) fifteen or twenty feet high, and covered with the graceful *Clematis cirrhosa*, which, in January, was in full flower. Fig-trees without leaves, the great Caroubiers (*Cerotania Siliqua*), the *Zizyphus Lotus*, and a number of shrubs with shining evergreen leaves, grow on the sides of the road, with here and there an occasional plant of *Chamærops humilis*, which is the despair of the agriculturist of the country because it is impossible to exterminate its strong roots without the aid of a dynamite cartridge. We ascend rapidly; cultivated fields come to an end, and the naked flanks of the mountains, worn by the torrents of spring and deeply gullied, begin to fatigue our animals. We encounter at 3,500 feet thick clumps of the Oak, known to the Arabs under the name of "Ballus," the *Quercus Ballota* with thick, tufted, dark gray foliage resembling that of the Live Oaks of the southern United States. The large acorns are sold in the market of Blidah. They are not bitter, although rather astringent for a cultivated taste. We soon leave these Oaks behind. Chestnut-trees, although not indigenous, grow here vigorously, as do several shrubs of Europe, like the *Ilex Aquifolium*, the *Ruscus aculeatus* and the *Prunus avium*.

A little further and we reach the Cedars, which hereafter cover all the slope with an imposing solemn forest, which we admire in silence. They are, for the most part, ancient trees many centuries old, but there are also many young trees which form impenetrable thickets. Under the old trees the ground is open and hard, resounding like iron, for it is still frozen, and here and there are patches of snow. It is impossible to imagine anything more beautiful or more touching than these great trees standing in their silent majesty. The trunks have a diameter of four and a half to six feet, springing from roots twisting about like serpents; the bark is thick, channeled, dark brown. The trunk separates generally at the height of a man into vigorous, horizontal branches. This horizontal direction of the branches is repeated to the top of the trees, so that they consist of a series of flat stages covered with thick, intense verdure, but diminishing near the top, which ends in a thin, upright leader. Upon these branches the cones appear in great quantity. They are very beautiful, of a clear brown color, and covered with drops of white resin. The cones are just ripe, although the scales are still closed. A month later they drop, leaving the central axis, which remains on the branches for a long time. The leaves are short, very close together, entirely covering the branches, dark green on both surfaces, although on certain individuals they are silvery white, the contrast of color making an effect of surprising beauty. The height of these trees is not great, the highest, I should think, not exceeding 60 to 75 feet, but solidity and strength are expressed to a supreme degree in their habit. An examination of this forest shows, to our surprise, the *Taxus baccata*, the *Cratægus Aria*, the *Euonymus latifolius*, a great Juniper probably undescribed, not unlike *Juniperus Oxycedrus*, *Quercus Mirbeckii*, an evergreen species of the eastern Atlas, but rare in this region. It is not uncommon to see immense trunks of the Cedars torn, burned and whitened, either upright or prostrate on the ground. These are the victims of lightning or of fires lighted by the Arab shepherds, who like to set fire to a great tree to warm their hands.

From the summit of Beni-Salah, which rises a little above the last Cedars, and which is covered with a thick growth of *Bupleurum spinosum*, we obtained a splendid view which will rest always engraved in our memory. About us are the rocks and the gorges of the Atlas covered with Cedars, while developing at the right and left to a prodigious distance extend the ranges of the province of Oran as far as the great pile of mountains to the east of Algiers, the Djurra, with its heavy covering of snow. To the north stretches the great undulating plain, dotted with innumerable towns and villages, known as the "Metidga," and ending in the long maritime chain surmounted with that gigantic monument called "the tomb of the Christian," but which is, in reality, the mausoleum of the dynasty of the ancient kings of Numidia, of the time of Augustus and a little earlier; beyond the beautiful Mediterranean in its blue immensity appears at a distance of more than 150 miles. But what a contrast the view to the south presents! Beyond the arid plateau of the interior is seen, under a pure sky, the immense plain of the Algerian Sahara, another sea, but a sea of sand and of stone.

There is, further west, in another part of the Atlas, a region where the Cedar forms extensive and luxurious forests. This is the Teniet-el-Had, near Affreville. The Cedars here cover nearly 10,000 acres, and ascend to nearly 6,000 feet above the sea level. In the lower part of this forest the *Callitris quadrivalvis*, called "Thuya" by the Algerians, is found. It is a charming little tree, the near relative of the Frenelas and the Widdringtonias of the southern hemisphere, which supplied the ancient Romans the precious wood called "Citrus," for which they paid fabulous prices—as much as $50,000 for a single table, and, according to Pliny, it was the great and wise Cicero who paid it. This wood is cut from the lower part of the trunk where there are numerous excrescences, and is really beautiful. It is light rose colored, regularly marked with dark red spots which form a delicate design. The great *Pistacia Atlantica*, the *Pinus Halepensis*, the most common Pine of Algeria, are found in this forest also. Many of the Cedars have here twelve to eighteen feet circumference of trunk. One of them, known as the "Sultana," measures nearly thirty feet around the trunk. The "Sultan," which is no longer alive, had a trunk circumference of nearly thirty-five feet.

The Atlas is not the only station of this tree in Africa. Beyond the Atlas and the grand plateaus of the interior, an immense mass of mountains exists in the province of Constantine, towering above the Atlas even at a height of nearly 7,500 feet. All this immense mountain region is covered with forests of Cedars which have absolutely the effect of our Spruces of the Alps, half covered in the snows of winter. From Batna one ascends in a few hours to the centre of this region. There are, at a lower elevation, forests of *Pinus Halepensis* mixed with *Juniperus Phœnicea*, which attain here a large size. Higher up the Cedars extend in all directions, and it would require days to cross these forests. The flora of these high mountains must be beautiful in summer. We only saw the remains of that of the previous year, but were able, nevertheless, to distinguish two species of Saxifrage, and a Violet, the *Viola Munbyana*, of which the seeds are now growing in our Alpine garden. At a single place in these regions in the Babor range to the east of Bougie, at an elevation of nearly 6,000 feet, M. Cosson discovered a small forest of an Abies which he mistook at first for the *A. Pinsapo* of Spain. It is, however, a distinct species—the *A. Babarensis* of Cosson or the *A. Numidica* with obtuse leaves, and more closely related to *A. Cilicica* than it is to the Spanish tree. It is a species which succeeds well in the gardens of Europe, although it never grows to any size.

Bâle, Switzerland. *H. Christ.*

New or Little Known Plants.

Berberis Sieboldii.

THE Japanese Barberry, of which a figure is published on page 249, may perhaps be considered by botanists an extreme form of the common Barberry, which assumes very various aspects in the different regions over which it ranges from western Europe to Japan. From a garden point of view, however, it is abundantly distinct from all the forms of the common Barberry in cultivation, and Miquel's name of *Berberis Sieboldii* may therefore well be maintained in garden literature at least.

*Berberis Sieboldii** is, in cultivation, a stout, compact shrub, three or four feet in height, with angled branchlets covered with pale gray bark, and slender three-forked spines. The leaves have finely ciliate margins and are obovate, rounded or rarely pointed at the apex, and are gradually contracted below into short, broad petioles; they are chartaceous, becoming somewhat coriaceous at maturity, dark green and lustrous, rather paler below, two inches or more long and an inch broad. They turn in the autumn to the most brilliant shades of scarlet and orange. The flowers, with pale greenish yellow ovate petals an eighth of an inch long, are produced in racemes two and a half to three inches long, and are larger than those of the common Barberry. The fruit, which is bright scarlet at maturity, is oval or obovate and half an inch long. From the common Barberry this Japanese plant differs, therefore, principally in the ciliate margins of the leaves, which are never spinulose-dentate, except on very young seedlings; in their lustrous surface; in the bright colors they assume in autumn; and in the rather larger, paler colored flowers and in the larger fruit. It is the most ornamental of all the Barberries of the Vulgaris section, and there are very few plants which equal or surpass it in the autumn color of its foliage.

Berberis Sieboldii appears to have been introduced into cultivation by Mr. Thomas Hogg, of New York, who found it near Hakodate, and who sent it to the Parsons nursery at Flushing, New York. It had previously been collected by Mr. Charles Wright, botanist of the North Pacific Exploring Expedition, at the same place. The plant has been distributed by Mr. Parsons, who sent it to the Arboretum several years ago under the name of *"Berberis Hakodate."* It is perfectly hardy, and one of the most ornamental and desirable of the Japanese shrubs which have been introduced into American gardens. *C. S. S.*

*Miquel, "Prol. Fl. Jap.," 1.—Franchet & Savatier, "Enum. Pl. Jap.," I., 22.

Cultural Department.

Notes on Shrubs.

THE Japanese Witch Hazel (*Hamamelis Japonica*) is commonly classed as spring-flowering in catalogues and general descriptions, but this season it proved a winter blooming plant, and when spring opened the pleasing yellow flowers of this shrub had been long past. It is extremely unlikely that these winter flowers will be followed by fruit.

But *Corylopsis pauciflora*, another dwarf plant of the Witch Hazel family, and also of Japanese origin, if well protected in winter, bears a profusion of flowers in the spring. It is a rare plant in cultivation in this country, and is not thoroughly hardy in all situations in the latitude of Boston; but it is well worth a little extra care and attention on account of its abundant pale yellow bell-shaped flowers, which appear in short clusters long before the leaves. At the Arboretum the first fully expanded blossoms were noted about April 17th; ten days later the plants were in fullest blooming condition, and they continued to have a pleasing and attractive appearance for a further period of ten days, or until about the end of the first week of May. The leaves begin to expand as the last flowers fade. Although flowering regularly for several years at the Arboretum, no fruit has been borne on the plants. The desirable qualities of this plant, however, cannot approach those of the Forsythias with their loads of bright yellow blossoms and large, free growing habit and thorough hardiness. Among seedling plants of the Forsythias there are sometimes slightly differing shades of yellow noticeable, a circumstance which will probably be taken advantage of by nurserymen who at present propagate the plants almost exclusively by cuttings or layers. The common, upright growing *F. viridissima* blooms fully a week later than those known under the names of *F. suspensa* and *F. Fortunei*, and, as a rule, it is not nearly so handsome and satisfying as the other species, which are better suited to those who have small grounds and space for only one Forsythia. If left unpruned a single plant of *F. suspensa* may in the course of time attain very large proportions, because the ends of the long, slender, drooping branches often take root when they reach the ground, and send up new shoots. In this way the original plant may spread over a large area and form a little forest of additional stems all about it.

Everybody has observed that the young, unfolding leaves of most trees and shrubs are of a much lighter green color than they are after they become fully expanded. The leaves of a few species and varieties appear almost yellow when they leave the buds. There is a form of the native Nine-bark (*Physocarpus opulifolius*, commonly known as *Spiræa* or *Neillia opulifolia*) which is esteemed by some people for the yellow color of its foliage, and which is often sold by nurserymen under the name of *Spiræa opulifolia aurea*. When the young leaves of this shrub are expanding they have a striking effect of yellow blossoms, and at a little distance the plants are not infrequently mistaken for Forsythias in full bloom. This yellow-leaved form of the species is sometimes met with growing wild along the banks of streams, especially northward.

There is a noticeable difference in the yellow color of the flowers of the Spice-bush (*Lindera Benzoin*) on different plants. The stamens and pistils are usually produced in separate flowers, and these staminate and pistillate flowers are generally found on different plants. The staminate flowers bearing the small yellow anthers naturally give a brighter aspect to the plants which produce them.

The Leather-wood or Moose-wood (*Dirca palustris*) of our northern woods bears the earliest yellow blossoms of any native shrub, unless we include stray flowers of the autumn blooming native Witch Hazel. It is not a showy plant, but on account of the early development (first week of April at the

Fig. 38.—Berberis Sieboldii.—See page 248.

Arboretum) of its modest blossoms it attracts attention, and it deserves a place in every shrubbery. It is a shrub which never requires pruning, as it is of slow, compact growth. There is no very early flowering, broad-leaved evergreen shrub so generally satisfactory as *Andromeda floribunda*. The racemes of white flowers are usually in their best condition about the first week of May, although they are conspicuous much earlier, and occasional open blossoms may be found in the first warm days of spring. The cultivated Japanese species (*Andromeda Japonica*) has more handsome and larger flowers, but they are not to be relied on in this latitude. In spite of an unusually mild winter, and among plants in varying situations, hardly a flower bud survived to open with those of its American congener.

The Leather-leaf (*Cassandra calyculata*) is another early flowering plant of the Heath family which may also be called evergreen. It reaches its fullest bloom at about the same time, but is not so conspicuous as the Andromeda, because the flowers, which are somewhat larger, are disposed in a

one-sided raceme and hang downward, so as to be partly hidden by the leaves. Although it is in some respects a more interesting plant than the Andromeda, the general effect in cultivation is less pleasing, not only because its flowers are half concealed, but because its foliage is not so bright. Before the best bloom of these plants has passed away another evergreen species, the so-called Water Andromeda (*A. polifolia*) opens its blossoms. This little shrub grows a foot or more in height, and in nature is commonly found in swampy situations; but it is easily cultivated in any good, moist garden soil, provided that it does not contain too much lime. The leaves are narrow and dark green above and white beneath. The flowers, which are borne in clusters on the ends of the branches, are nearly globular in shape and have a very small opening at the mouth. The color varies on different plants from white to a decided rose, but generally the color of the flowers is faintly rosy. This charming little plant usually flowers much later in its native haunts, but under the warmer influences of garden cultivation the flowers are developed in early May and last for a considerable time.

Spiræa Thunbergii is fast becoming popular and more widely disseminated. It deserves to be known to every one; for, besides being the earliest of its genus to blossom in the spring, its whole aspect is graceful and the delicate foliage assumes very bright and attractive colors in the late autumn and is persistent after many other shrubs have lost all of their leaves. At Boston it usually begins to flower in the latter part of April, and is whitest with bloom about the end of the first week in May. Three weeks later the seed ripens and falls to the ground, where, under favorable conditions, it at once germinates, and strong little plants may be produced before the end of the season. Many of the flower buds and some terminal shoots were killed during the past exceptional winter, but enough buds remained to develop fully and give the plants a very white and attractive appearance.

Arnold Arboretum. *J. G. Jack.*

Notes on Hardy Plants.

ONE of the first native Phloxes to flower is the Ground or Moss Pink (*P. subulata*). Its natural home is on dry, rocky hills and banks, but it can be grown in any light soil. It is common in cultivation and forms dense mats of its creeping stems, so that when established and in flower it displays a solid mass of color. Its flowers are rose-purple, half an inch or more wide; the average height is about four inches. It is surpassed in the size and brilliancy of its flowers by *Phlox reptans*, a species growing much in the same manner, but two or three inches taller, and with reddish purple flowers, often an inch wide. This species is only a few days later than the Moss Pink, and can be grown in shady corners. Its natural home is in damp woods. In a moist, light soil it can be grown in open sunlight. It spreads from creeping stems, and a few plants set thinly soon form a dense bed.

Too much cannot be said in favor of the white California Trillium (*T. sessile*, var. *Californicum*), the beautiful dark green leaves, the large, almost pure white petals, often two inches long by three-fourths of an inch wide. The durability of both flowers and foliage and its perfect hardiness make it second in value to *T. grandiflorum* alone.

The first to bloom of our Dentarias (Tooth-worts or Pepper roots) is *D. laciniata*, a little plant six inches high, bearing a small corymb of pale purple flowers. This species grows in moist, generally in loamy, soil, and in the shade. It lasts but a few days, and its flowers and foliage are quite pretty.

The variety of the Bird-foot Violet (*V. pedata*, var. *bicolor*) is a smaller plant than the typical species, but its flowers are more strongly marked in color and it is one of our prettiest of Violets. It needs shade, or a partly shaded location.

Caltha leptosephala is a species from Oregon and Washington, with white flowers and roundish heart-shaped leaves, much resembling our common Marsh Marigold (*C. palustris*), except in color; but its white flowers are a poor substitute for the bright yellow ones in our species; they are not as large, nor are they produced in such profusion. It would be useful to plant with the common species for variety, and it seems to prefer moist or wet situations. I have not tested its hardiness, but think it is probably hardy enough for New England.

Dicentra formosa, an Oregon species, is now in bloom. Its foliage is quite pretty, and the flowers are half an inch or more long by two-thirds as wide, and of a dull rose-purple color, borne in small clusters on naked stems from the root, eight or ten inches high. It is an attractive plant, but not nearly as valuable in any particular as our eastern *D. exima*. This species is larger, with larger and more numerous flowers of a brighter rose-purple color. It blooms from early spring until September. Its large clusters of showy flowers are on long naked stems from the root, and both leaves and flowers would be valuable in bouquets. It thrives in the shade, or, if in a light loamy soil, it will do well in open sunlight.

In many localities scattered over our meadows and pastures at this season of the year, wherever it can find a vacant spot in which to take root, may be seen in flower the charming little *Houstonia cærulea*, commonly called Bluets. The centre of the flower is usually yellow, but the outer portion varies from nearly pure white to light blue or pale lilac. It grows as commonly in places as a weed, yet it is never a pest. It is such a low little plant—seldom four inches high—and flowers so early before the grass has attained any size that it seems to be independent and harmless. It is a biennial, but it scatters its seeds, so that when once planted it continues to grow from year to year.

In the autumn of 1887 we received, from a correspondent in St. Petersburg, a few bulbs of *Fritillaria pallidiflora*. They were planted out and have stood two Vermont winters without protection. They have bloomed and borne seed each year. Unlike some other plants of this genus, this Fritillaria seems to propagate faster from seed than from scales. Its height is about one foot, and it bears from three to six large bell-shaped, pale yellow or straw colored flowers, an inch and a half long by an inch in diameter. These turn to a dull rose-purple with age. It is an attractive plant, and sure to become popular when more generally known. It thrives in almost any garden soil.

There is more than one form of the *Silene Pennsylvanica* (Wild Pink). We get from Pennsylvania a white-flowered variety which is not showy. But from other localities what seems to be the true type has beautiful pink flowers. It is not so easy to grow as the Fire Pink (*S. Virginica*), but when established will well repay the cultivator, and it comes into flower early. It needs to be set early the previous autumn in order to become established for flowering. Plants set in the spring do not seem to get established so as to flower the same year. It likes a thin shade and a fine loamy soil.

Southwick, Mass. *F. H. Horsford.*

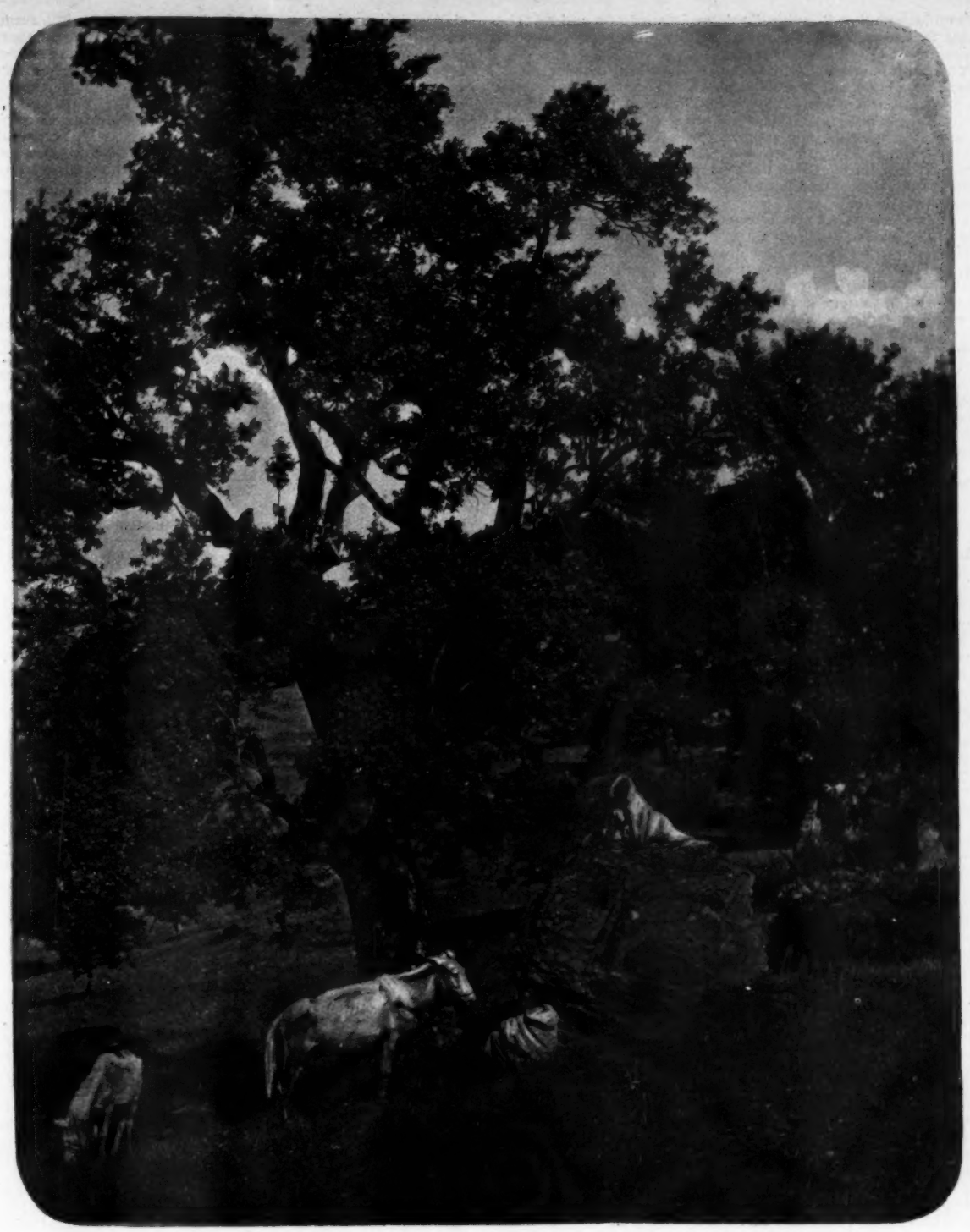
Hardy Plants for Cut Flowers.—V.

FEW of the Campanulas are useful for cutting, though all are good border plants, and most kinds are hardy. *Campanula persicifolia* and its many forms, especially the double white, are good for cutting. The double kind grows freely, is easily propagated by division, and the flowers last well when cut. There is a native species, *C. divaricata*, that can be used in the same way as *Gypsophila paniculata*. The small blue flowers of the Campanula have a pretty effect, for they are produced in the greatest profusion on much branched stems, one to two feet high.

Echinacea purpurea is a late summer composite, with large purplish flowers, which are very showy and durable. The plant lasts in bloom fully two months, and we have known flowers to last for weeks in water after having been cut. This plant is often sold as *E. intermedia*, which, with *Rudbeckia purpurea*, are but different names for the same plant. This Echinacea is thoroughly hardy, a native of the western states, and easily raised from seed, the seedling plants flowering the first year. Much has been said in favor of *Chrysanthemum maximum* for cutting purposes, and it certainly is a free bloomer, but *C. lacustre* is by far the best plant of the two for this purpose. It flowers at intervals all summer, while *C. maximum* gives but one crop of flowers inferior to those of *C. lacustre*, for these are larger, of good substance, on stems two to three feet long, white, with yellow centre. Both of these Chrysanthemums are easily propagated by division and are thoroughly hardy. *C. lacustre* prefers a moist soil.

We had been led to expect much from *Heuchera sanguinea* as a plant for winter blooming under glass. Our plants were strong clumps when lifted in fall, and were kept in a moderately warm house, but they are only just commencing to bloom on being planted in the open air. Judging from other Heucheras, it is doubtful if *H. sanguinea* would flower in the open in summer if forced during winter, but this does not detract from its value, as its hardiness is now fairly well proved. The elegant little coral red flowers, borne on long wiry stems, are sure to be appreciated wherever they are given a trial.

While on the subject of red flowers one is reminded that the old scarlet Lychnis is a good and useful plant that does not easily lose its hold on the appreciative public. It is a good perennial and very easy to propagate, as it seeds freely. The double variety is the best of the two for those who do not



The Cork Oak in Algeria.—See page 246.

object to a flower because it is double; but unlike the type, this may be propagated by cuttings only, and to secure these it is best, after the plant is past its flowering, to cut it down to the ground. Strong base shoots will soon spring up, and these may be readily rooted and will make good flowering plants the next spring. The double-flowered *Lychnis vespertina* is one of the very best double white flowering hardy plants for summer blooming, for it lasts in bloom with us for about three months. The beautiful double rose colored variety of *Lychnis viscaria*, known as Splendens, only needs to be seen to be appreciated. It flowers in abundance, and is a good old-fashioned plant that is too seldom met with. These double Lychnis must be propagated by division.

The gorgeous Oriental Poppies last several days if cut just as the buds begin to show their color. They open perfectly in water; but for those who do not care for their color the soft rose of the variety *Roseum* may perhaps be better appreciated. The plant differs only in the color of its flowers. It

is well known that Poppies die down in summer, and this suggests that some desirable annual be sown near them, such as Mignonette, to occupy the space.

The old-fashioned hardy Pinks are delightful border plants. There are perhaps only two kinds that are really hardy—that is, the pink and white. The florists' named kinds are more beautiful, but are not always able to survive the winters out-of-doors, although easily wintered in a cold frame, and they are well worth this little trouble. The easiest method of increasing the hardy Pinks is by layering in September, and these, when rooted and potted up, make nice stock for planting out in spring.

The Iris family is a numerous one, and to mention all that would be useful for cutting would be a difficult task. *Iris Sibirica hæmatophylla* is now covered with dark violet flowers, and is one of the earliest to bloom, and certainly is the best of the Sibirica group. The leaves, while young, are blood-red, but afterward turn green, and the plant often produces flowers three times during the summer and autumn. No garden should be without the true *Iris Florentina*, with its exquisite pale lavender, fragrant flowers. It belongs to and is one of the best of the *Germanica* section, and is the plant from which the Orris-root of commerce is obtained. The varieties of *Iris lævigata* are so numerous that one cannot say more with regard to them than that they last well when cut, the unopened buds expand in water, and that the more one grows of the better kinds the more the inclination to try others of the same section.

Passaic, N. J. *E. O. Orpet.*

Stove Plants.

AMONG the many old-fashioned stove plants that are worthy of more general cultivation are some of the Sanchezias, a very effective group belonging to the *Acanthaceæ*. They are easily managed and of strong and rapid growth, and might be described in a general way as having somewhat the appearance of very strong-growing Aphelandras, the latter belonging to the same order. The Sanchezias here noted are natives of Ecuador, and should be grown in a warm house, tolerably shaded. They are propagated by means of cuttings, which root readily if given a brisk bottom-heat, and should be potted on from time to time as it becomes necessary, as when starved they are liable to lose their lower leaves. The flowers are tubular in shape, light yellow in color and produced in a terminal panicle. Their effect is heightened by their being partially enveloped by crimson bracts. The species to which special attention is called are, however, grown more for their foliage than for their flowers, though valuable for either. *Sanchezia nobilis variegata* is probably the most widely known species, and has large, opposite, single leaves, variegated with bright yellow, the variegation following the venation of the leaves. *S. glaucophylla* is another excellent species, and is distinct from the first-mentioned in various particulars, one noticeable point being found in the shape of the stem; that of *S. glaucophylla* being round, while the stem of *S. nobilis* is more or less winged. *S. glaucophylla* is also handsomely variegated with yellow, with the addition that the midrib of this species is bright red or crimson. The leaves of these Sanchezias, when well grown, attain a length of from twelve to fifteen inches and a breadth of four to five inches, and they possess much decorative value; but it should be remembered that to grow them well they need to be kept clean, both mealy-bug and aphis being very partial to them.

Duranta Baumgartii variegata is a pretty little shrub of South American origin, and though frequently found in a warm house, need not necessarily be grown in a high temperature, as it may be used for out-door work in summer. It has opposite leaves of fair size and marked with bright yellow. This Duranta is easily grown in light loam, but should not be allowed to become very dry or it will be attacked by red spider. Cuttings of soft wood root readily, and the young plants should be pinched back occasionally to keep them in shape, as the natural habit of the plant is somewhat straggling.

Mussænda frondosa is a charming stove flowering plant from Ceylon, and, though in cultivation for many years, it is very seldom seen. It belongs to the *Rubiaceæ*, and would prove a valuable addition to many collections on account of the striking combination of colors in its flowers. The flowers are produced in racemes, and bear some resemblance to a yellow Jasmine; but they are surrounded with pure white bracts, the latter being formed by the enlargement of one segment or division of the calyx. *M. frondosa* is also increased by cuttings, which may be put in at almost any time, providing the shoots thus used be moderately soft, though as this plant usually flowers in the late summer or in autumn, it is well to root the cuttings early in the spring, so that the plants may be grown on rapidly for fall use in the conservatory. The Mussændas should be potted in a light mixture, equal portions of loam and peat, or leaf-mould, with some sand, making a satisfactory compost. The pots should be well drained, as the plants enjoy liberal watering during the growing season, and a moist atmosphere with some shade will be found beneficial. There are other species of Mussænda besides the one referred to, some of which are but little known except to botanists.

Holmesburg, Pa. *W. H. Taplin.*

Orchid Notes.

DENDROBIUM SUPERBUM.—This is a very handsome species of a pendulous habit, almost always becoming deciduous just as the flower-buds begin to grow; it has ovate-oblong obtuse leaves, which give the stems a very pretty effect after the growth is finished. The stems grow from two to three feet long, and from each side of these the flowers proceed in rows, each measuring three to four inches in diameter. They are of a beautiful rose-purple color, with a fringed, rich purple lip, marked with a pair of sanguineous spots at the base. They last in perfection three weeks, if kept in a cool, dry atmosphere. The flowers have a peculiar Rhubarb-like odor, particularly sweet early in the morning, when the sun shines on the house and before the ventilators have been opened. The plants here are in baskets suspended from the roof, in a light, airy place in the summer-flowering Cattleya-house. They enjoy a compost of fibre and sphagnum moss, with a little charcoal to keep it sweet. The plant likes a good supply of water when growing. It is most generally known under the name of *D. macrophyllum*, the name formerly applied to *D. Veitchianum*.

DENDROBIUM FARMERI.—This is an evergreen, compact-growing species, with delicately beautiful blooms and a habit similar to that of *D. densiflorum*. The stems are clavate, from a small knob-like base, and are deeply furrowed, so as to become quadrangular. At the point of the stems are three or four ovate, leathery leaves, and from them grow the beautiful, loose-drooping racemes of numerous flowers, which have ovate-obtuse sepals, the larger petals being yellowish white flushed with pink. The lip is straw colored, with a rich yellow centre, and is denticulate at the margin. It expands its flowers in April, and lasts several weeks in beauty when kept in a cool, dry place. We grow this species in baskets suspended from the roof, in the same way that we treat *D. superbum*. It likes a fair quantity of moisture when growing, otherwise it will become covered with thrips; it should be kept comparatively dry when at rest, or it will not bloom freely. We grow this in sphagnum moss, which appears to suit it admirably.

Staatsburg-on-the-Hudson. *F. Atkins.*

CYPRIPEDIUM ROTHSCHILDIANUM.—A plant of this beautiful Cypripedium is now in flower in the collection of Orchids owned by Hicks Arnold, Esq., in New York City. It is entirely distinct and a noteworthy acquisition. It is a vigorous plant, having stout, very broad leaves, from the base of which is produced a scape bearing several flowers. The dorsal sepal on first opening was white, heavily marked with broad lines of a dark purple; after five or six days the ground color turned to a light yellow. The petals, which measure from four and a half to five inches in length, stand boldly outward, and are striped and spotted with dark purple, the edges being furnished with numerous hairs. The staminode is a distinctive feature in this variety, being covered with bluish hairs. The lip is very similar to that of *C. Stonei* in shape; the color, however, is somewhat darker. The plant requires a temperature slightly warmer than the majority of Cypripediums, and dislikes being in a large pot. Peat, moss and turfy loam, in equal proportions, make a good compost. With a temperature of sixty-five to seventy degrees it will be found an easy plant to cultivate.

Summit, N. J. *A. Dimmock.*

Fritillaria armæna.—This is a small sized species, about four inches high, from Asia Minor. The stems are clothed with pale green lanceolate leaves, and the dark purple, bell-shaped flowers, borne on pedicels an inch and a half long, appear singly or in pairs at the top. The pedicels turn downward at their extremities and thus the flowers assume the nodding position characteristic of the genus. At the Bussey Institute (a department of Harvard University), I noticed, during the latter part of April, a group of a yellow-flowered variety of *F.*

armæna in an exposed border and it is quite as attractive as the type. The flowers of the species and its variety are almost three-quarters of an inch long and the same in width at the mouth. Both succeed satisfactorily when planted in the fall and given the same treatment under which Hyacinths and Tulips thrive. They are well worth a place among the sturdy little flowers of early spring.

Harvard Botanic Garden, Cambridge, Mass. *M. Barker.*

Transplanting.—Nearly every vegetable will endure transplanting without permanent injury, and this practice simplifies garden work and adds much to the area of a small garden. Lettuce can grow a month or more in the seed-bed before the transfer; Beets sown in the same way can be set out in the garden when the ground is warm, and will be two or three weeks in advance of those planted from seed in the spring, and the roots, if pains is taken in the work, will be of good form; Peas can be transplanted into moist or well watered soil and will grow thriftily; Beans do best if grown in pots or flats, as many seeds in a place as would be planted in a garden, and, when well up, shifted dirt and all into the out-door hills about the 1st of June. By this method we get Cucumbers much earlier, and they can be grown to the third leaf before they are set. All forms of Cabbage, Onions and Celery should be transplanted; and melons in this way can be had much earlier. Parsnip, Carrot, Salsify and roots of that nature are not improved by transplanting.

Plants of any kind should be given a permanent home before they are overgrown in the seed-bed. Too large plants are less likely to make perfect vegetables than those set when at the proper size. Seedlings will only attain a certain point of growth in flats, and when this period of stagnation is reached no more growth can be expected without a change of soil or location. If the plants have good roots and are set toward evening in freshly prepared soil they will live. A strong wind is more destructive to young plants than the sun's rays, and if the soil is well prepared and pressed lightly about the roots, most plants will grow even in the sun without shelter. A bath in thin mud is a good preparation for the roots of some plants when they must be set in a dry time. Watering after or during the time of transplanting is much practiced, but, unless the weather is very dry, the plant will do as well without if properly set. Cabbages and like plants, if lifted a day before they are to be set and left in a cellar, will make a new growth of root, so as to gain rather than lose time by the day's delay.

West Springfield, Mass. *W. H. Bull.*

Little Known Vegetables.—As stated by a correspondent on p. 228 of GARDEN AND FOREST, several European vegetables deserve to be better known in this country. We have few vegetables of better quality or of easier culture than Celeriac. It possesses plainly enough the delicious celery flavor and yet is sufficiently different from it to be a distinct vegetable. By packing in earth or sand the roots may be preserved in a cool cellar until spring without losing their fine quality.

I have always started the plants of Celeriac in the hot-bed or cold-frame, but I now think that if sown very early in spring on a nicely prepared bed in the open ground the seed would germinate sufficiently well to produce a good crop. The plants are hardy like those of Celery and endure frost well. They should be given rich ground and be well cultivated, but hilling up is not as essential as it is with Celery.

Another vegetable that should be more common in our gardens is the tuberous-rooted or Hamburg Parsley. This is truly a Parsley with a root the size of a small Parsnip and with a flavor peculiar to itself. The plants should be started in the hot-bed or cold-frame, as the seeds, like those of the common Parsley, are rather slow to germinate. When of sufficient size the plants may be set in a well prepared bed in the garden, in rows two feet apart. The roots are rather slow of growth, becoming fit for use in September or October. Like the Celeriac, they may be preserved through the winter in the cellar by packing in earth or sand.

To my own taste, both the Celeriac and the Hamburg Parsley are equal to Salsify as contributions to the table. To some, however, their peculiar flavors are less agreeable. I have observed that in many persons a taste for the characteristic flavors of vegetables belonging to the *Umbelliferæ* needs to be acquired.

University of Wisconsin. *E. S. Goff.*

Under the Roses.—Beds of hardy Roses are not attractive, either in the early spring, when the leaves are forming, or after the flowering period in June or July. I have found it very advantageous to plant between the bushes the yellow and blue varieties of *Viola cornuta*. A large Rose-bed in my garden, thickly planted with *Viola cornuta*, var. *lutea*, is now a blaze of brilliant color. The plants reproduce themselves with great facility from seed, and in a few years numbers can be obtained. They also increase by spreading, and soon yield very large clumps. The seedlings vary somewhat in color and form as well as in foliage, but are almost always handsome, and frequently as large as an average Pansy and hardly less beautiful. They are also faintly, but distinctly, fragrant. They continue in bloom until late in the fall, but the flowers in summer are somewhat smaller, as a rule. Planted near Pansies the two forms hybridize easily, but I have not obtained any noteworthy flowers in this way. Two very fine new forms of *V. cornuta* are sold under the names of Admiration and Magnifica. These, perhaps, belong to the class of Tufted Pansies, and are respectively violet-blue and purple-violet. They appear to be not less hardy than the species, standing the winter in the open ground without other protection than the manure thrown upon the Rose-bed in the fall. The plants do very well even in a light loam, but require plenty of water in the summer.

Newport, R. I. *W. G.*

Iris Gatesii.—Joining Mr. Orpet in his praise of *Iris Susiana*, I hope he will allow me to state that now we have a plant which excels it in beauty. *I. Gatesii* was discovered by Mr. Sintenis in the mountains of southern Kurdistan, and was introduced by me to Europe two years ago. The flowers on stalks as thick as a man's finger and twenty-five inches high, show well above the foliage. They are in some cases double the size of those of *I. Susiana*, and the coloration is not so sombre, but far more delicate and more beautiful. The ground color is creamy white, the very massive standards, as well as the falls and claws, are dotted over with very minute silvery gray points and also adorned with a most delicate network of silvery gray lines. The beard is ochraceous yellow, and, seen from a distance, the flower looks yellowish gray. This Iris has the largest flower of any of the genus so far known, and, apart from its size, the flower is striking and of a highly aristocratic appearance. There are, moreover, some other novelties coming on, one of which resembles *I. Susiana*, but with markings of a crimson color.

Baden-Baden. *Max Leichtlin.*

Recent Publications.

Forestry in North America.—III.

Part II. sets forth the fundamental principles of silviculture. The author maintains, with justice, that the principles of silviculture hold good all over the world, but adds that the illustration of these principles must be taken from a limited area. For this purpose he has chosen the timber-trees of western Europe on the fiftieth degree of north latitude and the countries immediately to the north and south of it—in other words, the forest-trees of England, northern France and the greater part of Germany. These species the author does not attempt to describe; he assumes that his readers are familiar with them. The first chapter dwells upon the external conditions which influence the development of forests. He says:

"Soil, including subsoil, and atmosphere are the media which act upon forest-vegetation, and they together are in silviculture called the 'locality.' The active agencies, or factors, of the locality depend on the nature of the soil and the climate, the latter being governed by the situation. The sum total of these factors represents the quality or yield-capacity of the locality. The forester requires to be well acquainted with the manner in which soil and climate act on forest-vegetation, in order to decide in each case which species and method of treatment are best adapted, under a given set of conditions, to yield the most favorable results."

Every forester knows that, on good soil and under conditions otherwise favorable, a timber-crop is heavier than one of equal age grown under less favorable conditions. In the concluding section of this chapter the author shows how we may use this fact in order to assess the quality of a locality. Numerous measurements of woods of different species and ages, grown under different conditions, have been made in Germany on a systematic plan, and from the data thus obtained yield-tables have been calculated, showing the volume of timber produced at different ages on a given area by the principal species on localities of different quality classes. Using the yield-tables published for the Scotch Pine by Wilhelm Weise, now Professor at the Forest School of Karlsruhe, the author shows that at the ages of 50 and 100 years the volume per acre of timber only, not including faggots, in localities

which, according to their yield-capacity, are classed as first, second and third class, is as follows:

	I.	II.	III.
Cubic feet at the age of 50 years, . .	5060	3940	2700
Cubic feet at the age of 100 years, . .	8390	6410	4910

The figures of these yield-tables Dr. Schlich has found, to a certain extent, to be applicable to Scotch Pine-forests in England. Some of the data of those tables have already been used in the preceding remarks. They can also be used in order to assess the yield-capacity of any locality stocked with Scotch Pine in England. Eventually, similar yield-tables must be prepared for the principal forest-trees of North America, and this is a work which ought to be undertaken by the Federal Government, or by the governments of individual states, for the benefit of forest-proprietors.

Before, however, such work can be undertaken with any prospect of useful result, two conditions must be fulfilled: The first condition is, that a unit of measurement must be adopted for all classes of timber. In countries with the metrical system it is the cubic metre; in Great Britain, India and the Colonies it is the cubic foot—and this it may, perhaps, be found convenient generally to adopt in North America. The second condition is, that state forests are constituted, permanently demarcated so as to be safe against encroachment, and that their management is properly organized. Without such public forests it will not be possible to prepare yield-tables or to collect any other statistical data necessary to serve as a guide to forest-proprietors in the proper management of their estates.

The second chapter deals with the shape and development of forest-trees, but we can refer only to what the author says regarding height-growth. Building again chiefly upon researches made in Germany, Dr. Schlich explains how the different species have a different mode of height-growth. On page 163 an instructive diagram will be found exhibiting the relative height-growth of Spruce, Silver Fir, Beech and Scotch Pine in a locality of the first quality. At the age of fifty years the mean height attained by each species is as follows:

Scotch Pine, ...	64 feet.
Beech, ...	60 "
Spruce, ...	55 "
Silver Fir, ...	40 "

At a later age Spruce and Silver Fir take the lead, while Beech and Scotch Pine remain behind in the race; and when 120 years old the order of the species stands as follows:

Spruce, ...	118 feet.
Silver Fir, ...	108 "
Beech, ...	102 "
Scotch Pine, ...	97 "

Scotch Pine and Beech, therefore, make the principal height-growth during the first period of their life, whereas Spruce and Silver Fir continue to grow vigorously in height to a much greater age, Spruce more so than Silver Fir. The progress of height-growth of the different species is much affected by the character of the soil, by elevation, the more or less crowded state of the wood and other circumstances, but under otherwise similar conditions it will always be found that deep, fresh, fertile soil produces much taller trees than shallow, dry or rocky soil.

In the third chapter, which deals with the character and composition of woods, the author points out that the object of silviculture is not to rear isolated trees, but considerable masses of trees, forming more or less crowded woods. Pure woods consist of one species only, or of one species with a slight admixture of others, whereas mixed woods contain a mixture of two or more species. The advantages of mixed woods are clearly set forth, and the author's remarks on this subject may be specially recommended to the attention of proprietors and managers of woodlands in America.

The last and most important chapter deals with the silvicultural systems—that is, the different methods under which the creation, regeneration, tending and utilization of woods are effected. The three well known classes are: first, high forest, originating in seedlings, either self-sown or artificially raised; second, coppice, which regenerates itself from coppice-shoots; and third, coppice with standards, a combination of seedling and coppice-forest. The modifications of these three main systems are numerous, and particularly the treatment of high forest has developed in a great variety of ways. On this subject we must refer the reader to the manual. These are matters which can hardly be fully understood without opportunities for obtaining practical experience of forests treated under the various systems described. Such opportunities cannot at present be found in the United States. For that purpose students will have to go to Germany or France. And this necessity of studying forestry abroad will continue until a commencement on an adequate scale has been made in the United States to manage forests on a comprehensive and well considered plan.

This remark must not be understood to mean that those who have not studied forestry in Germany or France are not competent to undertake the management of forests in America. A commencement must be made; the sooner it is made the better, and it would be a mistake to wait until a sufficient number of men, trained in their profession abroad, were available. Any one, however, who can afford the time for studying forestry in France or Germany will find such study the most useful preparation for forest-work in America. The different systems of treatment which have been developed in Germany for the Scotch Pine, the Spruce, the Silver Fir, the Oak, the Ash and the Beech cannot, as they stand, be applied to the forest-trees of America and to the widely different conditions of climate which are found in the different regions of the United States. New methods must be devised on the ground of actual experience in America, but a thorough practical knowledge of the European system will be found most useful as a guide. The operations that will most completely secure the regeneration of the White Pine, the Douglas Fir, the Redwood, the Long-leaved Pine and other forest-trees of North America, either naturally or by sowing and planting, will doubtless be similar to those which have been brought to the present state of perfection by the persistent labors of foresters in France and Germany, particularly in Germany. The same remark applies to all other operations necessary to organize the systematic management of forests in America, the demarcation of forests, the settlement of forest-rights, the division of the forest into blocks and compartments,—the preparation of working-plans, the arrangements for its protection and the organization of the staff of administration, the executive and protective officers. For the arrangement of all these matters in America the experience which has been gained in Europe will serve as a most useful guide, and it would be a waste of time, of strength and of money not to utilize that experience to the utmost. Hence it will be of great advantage in America, as it has been under analogous circumstances in India, if as many as possible of the foresters who are to inaugurate the new system of forest-management have received a thorough training in their profession, both practical and theoretical. Nor is there any doubt that under existing circumstances the forests of Germany or France, and particularly those of Germany, offer the best opportunities for such professional training.

Allusion has already been made to the necessity of commencing the collection of statistical data upon which to build yield-tables for the more important of the American timber-trees. This is only one of numerous important subjects which must be studied systematically by means of scientifically arranged researches, the object of which will be to ascertain mode and rate of growth, to determine the effect of different methods of treatment and to obtain replies to many questions connected with forest-management. It has already been said that the duty of conducting these scientific researches, which are necessary to aid systematic forest-management, must be undertaken by the state, because it is not likely that private forest-proprietors will devote their time and their means to such matters. Those who may undertake these researches should certainly have received a complete professional training in forestry and in the sciences upon which the forester's profession is built up. They ought to have seen themselves how such researches are conducted in those countries where forestry is best understood. A commencement of collecting statistical data concerning the forests of North America has already been made by the Forest Division of the Department of Agriculture; it is therefore reasonable to suppose that the state will undertake this part of the work. It cannot, however, be carried on with any prospect of satisfactory results unless state-forests in the different great forest-regions are formed and managed on a good system.

It might be deemed preferable not to attempt the systematic management of forests on a large scale until their scientific researches have given results which admit of practical application, and until they have furnished definite precepts for the treatment of the different classes of forests. Such a proposal should not be listened to for a moment. A commencement must be made at once; the sooner the better. The best must be done under the circumstances. There may be failures, and the best method of treatment will certainly not be hit upon at once. The shrewd common sense, the keen eye to business of Americans, aided by a good knowledge of forest-management as practiced in Europe, will eventually hit upon the

right method in each case. The art of treating the American forests to the best advantage must grow up as the result of practical work on a large scale. The development of systematic forestry in America, however, will be greatly aided by the experience gained in other countries, and Dr. Schlich's Manual will doubtless give a powerful impetus to systematic forest-management in the United States.

Bonn, Germany. *D. Brandis.*

Correspondence.

Grapes for Home Use.

To the Editor of GARDEN AND FOREST:

Sir.—Mr. Powell's criticism of my list of Grapes for family use in GARDEN AND FOREST for April 30th, coming from an experience in a different latitude and soil, is valuable. This fact should be borne in mind by the reader, and it should be remembered, too, that the original information was given to a novice living in my latitude and having a soil differing from my own only in being more sandy. I concur in Mr. Powell's estimate of the quality of the Worden. I have been insisting on its superiority to the Concord in this respect for the last ten years, and yet we often hear it asserted that the Concord is the best Grape grown, and that Worden is only another name for it. I wish I could endorse the claim of Mr. Powell that the Worden keeps better and does not break (crack) so easily as the Concord. These have been its chief faults with me; but, after all, I am not certain that its resistive force in this respect is feebler than that of the Concord under the same conditions. A cross of Worden and Herbert would be desirable if it resulted in a "swapping of jackets."

I did not mention the Massasoit for the simple reason that it is a poor setter. El Dorado has the same defect. I have never yet been able to get a perfect cluster from either of them. Now, I should be grateful to Mr. Powell if he will teach me how to secure perfect clusters on these two varieties. Other growers accomplish this, and what is lacking in my soil or treatment I never could discover. The Lindley is also subject to the same defect with me, and so are many others of Rogers' hybrids. Herbert leads them all, as far as I have tested them, in size of berry; but Wilder exceeds it in size of clusters, which often weigh a pound and more, while half that weight would be heavy for a cluster of Herberts.

The quality of the Duchess is beyond question, but it is the first to show symptoms of black rot, and bagging the clusters before blooming has not entirely excluded the fungus. It is strictly a variety for amateurs in this locality, and requires much coddling for success.

I am glad to hear good words for Diamond and Hayes from disinterested sources, but these are comparatively new, and have not yet, with me, reached the five-year probation fixed by Downing as necessary for determining the proper position of a new Grape.

The time has passed when it was only necessary to plant the vines and allow them to take care of themselves. Success with this fruit, as well as others, in these days of insects and fungi, is only gained by constant and intelligent care. The hardiest disease-resisting kinds are the only ones fit for indifferent and careless cultivators to plant. They can, if they will, learn valuable lessons from these, and be better able to care for the better and more civilized kinds.

Montclair, N. J. *E. Williams.*

Durability of Fence-Posts.

To the Editor of GARDEN AND FOREST:

Sir.—I am told, though not authoritatively, that a fence-post will last much longer if put in the ground upside down. Can you let me have either a confirmation or refutation of this?

Mount Airy, Philadelphia. *B.*

[Some years ago Dr. W. J. Beal, of the Michigan Agricultural College, selected sticks of thirteen different kinds of timber. Each stick was cut in two in the middle, and each of these was split, making four sticks from each one. One set was placed in sandy land, and the other in clay land; in each place putting near each other a stick "top end up," and its mate "bottom end up." In some cases those with top down lasted best; in some the reverse was true, while in others there was no perceptible difference. The conclusion reached was that, so far as durability goes, it made no difference which end of the post was set in the ground.—ED.]

Plant Problems.

To the Editor of GARDEN AND FOREST:

Sir.—Two or three years ago a certain neglected meadow in this neighborhood was entirely covered with *Blephilia ciliata*, only a plant here and there of any other species being discernible, presenting in full bloom, as may be imagined, a scene of rare beauty—a vivid reflection of the sky's own blue. Next year the prevailing plants were *Lobelia spicata* (largely predominating), *Achillea Millefolium* and *Rudbeckia hirta*, conspicuously interspersed with *Lilium Canadense* and *L. superbum*, and only an occasional plant of Blephilia among them all. The last season, the third in order, I counted over a dozen conspicuous flowering plants all blooming at one time in charming prodigality and confusion—a veritable flower-garden of eight or ten acres in extent, and of Nature's own ordering—and the Blephilia still more rare, having practically disappeared. The plant in question being a perennial, what became of it the two previous years, and why, at least, could it not hold its own with some of the plants referred to?

In the late summer of last year the beautiful American Centaury (*Sabbatia angularis*) was here one of the most common of plants—freely distributed over neglected fields and waste places. For the five years previous, or since the season of 1884, when it was equally abundant, scarcely a plant was to be seen. During my ten years' residence here these are the only instances where I have known it to bloom thus generally. Why has a biennial plant grown and flowered at such rare intervals, and simultaneously over an extended area?

Fairview, W. Va. *W. E. Hill.*

Recent Plant Portraits.

Botanical Magazine, May:

EREMURUS AURANTIACUS, *t.* 7113; a noble Asphodel from the Caucasus, and, like its congeners, a most desirable hardy rock-plant, although rather difficult to manage and requiring careful drainage to prevent the thick root-stalks from rotting during winter.

ABIES BRACHYPHYLLA, *t.* 7114; a beautiful hardy Japanese Fir, with broad, dark green, distichous leaves, quite white on the lower surface from the broad bands of stomatæ, and one of the group of Japanese trees of which *A. firma* should perhaps be considered the type. As the editor, Sir Joseph Hooker, points out, "no one but a botanist traversing the islands of Japan, with an eye especially directed to its Silver Firs, can determine whether species or varieties or synonyms are represented under the above names" (*A. brachyphylla*, *A. homolepsis*, *A. Veitchii*, *A. firma*, etc.)

PASSIFLORA MIERSII, *t.* 7115; a graceful Passion-flower from Brazil, belonging to the section Grenadilla; a slender glabrous climber, with rather small flowers with white petals and purple corona.

BERBERIS VIRESCENS, *t.* 7116; under this name Sir Joseph Hooker proposes a new species for a Himalaya Barberry, first detected by him in Sikkim in 1849, and recently introduced into cultivation. The flowers are small, a third of an inch in diameter, in fascicles or short racemes, and are sulphurous or greenish yellow. The fruit is oblong or narrowed upward, compressed, scarlet or black, and one-seeded. As this Barberry grows naturally at an elevation of 9,000 feet or more above the sea, it may be expected to survive the winters in our Northern States.

PRIMULINA SINENSIS, *t.* 7117; a very remarkable Gesneriaceous plant, with the habit and foliage of a Primula, a native of southern China. The lobes of the spreading corolla are white, with broad violet-purple borders. This botanical curiosity was introduced into England from the Hong-Kong Botanical Garden in 1887, and flowered last summer at Kew for the first time.

Notes.

The sixteenth edition of Dr. A. Garcke's "Flora of Germany" has just been published by Parey in Berlin.

The Garden reports that *Shortia galacifolia* has flowered at Kew, and "judging from its health and vigor, is likely to become popular" in England.

The corner-stone of the Washington Memorial Arch in this city will be laid on Decoration Day with appropriate services of a religious and military character.

The Garden (London) speaks of a seedling Tuberous Begonia, at the nurseries of the Messrs. Laing & Sons, in which the semi-double blooms of large size and rich self crimson have

florets whose edges are handsomely fimbriated. This is a new break in these plants, and such a margin will help to relieve the flower of any formality.

A German journal names Gladiolus Snow White as decidedly the best white variety of the flower and recommends it to the attention of its readers as an important American novelty.

The description of the Celtis or Nettle-tree, published some months ago in GARDEN AND FOREST, has attracted much attention in Europe, and a long abstract of it was recently published in *Gartenflora*.

It is said that this summer will be an exceptionally good time to visit the Yosemite Valley, as the snow-falls of the past winter were the heaviest on record and the volume of water in the falls will therefore be unusually great.

The proposed alteration of the tariff, by which a duty of twenty per cent. will be imposed on plants, was discussed at a recent meeting of the Philadelphia Florists' Club and a resolution protesting against the proposed duty was passed. It is claimed, however, that this resolution does not represent the true condition of opinion among the members of the craft in Philadelphia, as the resolution was passed by a bare majority in a vote comprising about one-fifth of the membership of the Club, and the question will probably be called up at another meeting.

The *Illustrirte Gartenzeitung*, of Vienna, says that *Primula obconica* was brought to notice in Germany by descriptions and an illustration, which, in 1886, it reproduced from an American journal. At a horticultural congress held two years later it was agreed that the plant "did not fulfill the expectations that it had excited," but, the writer continues, later experience has been different, as admirable plants of *P. obconica* were shown during the winter just past by all the florists of Vienna. Now he doubts, however, whether it will preserve its popularity, owing to the alleged poisonous character with which it is credited by American florists.

One of the large specimens of *Livistonia Sinensis* in Horticultural Hall, Fairmount Park, Philadelphia, has recently perfected its first crop of seeds. The plant is about twenty-five feet in height and it bore three large spikes of flowers which were followed by a liberal quantity of seeds, the latter setting in the spring of 1889 and ripening in April of the present season. As an instance of the readiness with which this species germinates, it may be added that some of the seeds that fell from the plant before the crop was gathered were found to have germinated while lying on the ground beneath, which was carpeted with Selaginella.

German horticulturists complain rather bitterly that it is difficult for them to compete with the firms which import flowers during the winter from southern Europe, and especially from the districts about Nice. They envy in this respect their brethren in our northern towns, where as yet all the flowers used in winter are grown under glass near home. They say that to grow Roses, for instance, as American florists grow them, in immense quantities for the mid-winter trade, would be a ruinous undertaking, their only profit coming from late blooming sorts which are in request after the end of February, when the southern supply falls off.

Columbines are now in the first flush of their bloom and beauty. Among the forms in flower are *Aquilegia Olympica*, *A. glandulosa jucunda*, *A. Canadensis*, *A. alba grandiflora* and *A. Sibirica*, with hybrids in great variety, double and single, long-spurred, short-spurred and no-spurred. The Columbines, ranging through reds, blues and yellows, seem to disprove the oft-quoted theory that these three colors are never found in the same genus of plants. Other hardy flowers which have bloomed during the week are *Scilla campanulata*, German Iris, *Anemone sylvestris*, the hybrid Violets known as "Tufted Pansies," and Daphne Cneorum.

California correspondents speak of the great success which has attended the "colony system" recently introduced in the southern part of the state. Tracts of land are laid out in small holdings and apportioned among a body of immigrants, who, upon their arrival, find everything ready for work. A body of colonists from Holland who arrived not long ago at Merced, found houses built and gardens and orchards arranged, more than two thousand acres having been planted with fruit-trees and vines; and fifteen English families were established a few weeks ago at Bakersfield, in Kern County, each receiving a forty-acre holding similarly prepared.

A considerable quantity of fine vegetables come to this city from Europe during the winter, such as Brussels Sprouts, with Endive and other salad plants. Romaine Lettuce is now coming in from Long Island, but an occasional lot still comes from France. The imported Lettuce is very large and fine flavored and sells for $2.50 per dozen. A few Globe Artichokes still arrive and sell for $20 per hundred. The very finest heads are said to be raised in Algeria, whence they are shipped to France and are brought here in boxes of ice which are furnished by the importers. Last week a few of the melon-shaped fruits of the Pawpaw-tree (*Carica Papaya*) came into market from the West Indies and a few Cantaloupes from Cuba.

Mr. T. Laxton, well known as the originator of so many varieties of the best Peas, says that if all the advances in earliness claimed for new varieties within the past twenty-five years were added together, Peas could now be had before New Year's. And yet the claims of originators have not been very wide of the truth. For some reason, very early Peas tend to come later year after year. This may be because the earliest peas to ripen are lost before the crop is gathered for seed, and this constant rejection of the earliest seed tends to fix the habit of later ripening. It happens, too, that very often the earliest peas to ripen are used for the table and this helps on the selection for seed of the peas which ripen latest. This constant loss necessitates the production of new varieties by the careful selector or hybridizer. A similar process goes on in regard to the height of Peas, as the dwarfer plants get lost or left in harvesting and the tendency to revert to old forms asserts itself. In this way the so-called dwarf varieties come at last to be tall. Again, quality may deteriorate by cross-fertilization, so that these persistent tendencies can only be counteracted by constant watchfulness and the production of new forms.

Michigan is one of the states in which a bounty is paid for the extermination of the English sparrow. But according to a late bulletin from the Experiment Station of that state the bounty too often helps forward the destructive work of the sparrows by killing other insectivorous birds. Too many of the county clerks cannot distinguish the head of an English sparrow from that of a linnet or a thrush, and money is actually paid for the destruction of such valuable birds as the song sparrow, the red-polled linnet and the evening grosbeak—birds which are protected by the state, under a law which makes their slaughter a misdemeanor to which a penalty of five dollars is attached. The bulletin gives such illustrations and descriptions as will enable the officers to distinguish between the native birds and the foreign nuisances. Nevertheless the law should be amended so as to make it the duty of county clerks to inform themselves and to collect a fine for every native bird offered for a bounty. It is to be remembered that the English sparrows destroy fruit, grain and vegetables. They attack blossoms, young fruit and grain at harvest-time. They eat some insects, but they protect more than they feed upon by driving away native insectivorous birds. Wrens, martins, swallows, blue-birds and even robins and wild pigeons suffer from these marauders, who destroy nests, young birds and eggs for no other apparent purpose than to drive these birds out of the neighborhood.

It is interesting to find in the shrubberies near Mount Morris, in Central Park, a number of large well established plants of the old white Indian Azalea, Phœnicia, unharmed by the winter, and in full flower. The excellent condition of these plants testifies to the fact that the Indian Azalea, or some of its varieties, at least, can be grown in much more severe climates than these plants have been supposed capable of flowering in. Only a faint idea of the beauty of the Indian Azalea in flower is obtained by seeing it grown as a pot plant, as the flowers quite hide the foliage, and the real charm of their delicate colors can only be appreciated when the plants are brought into immediate contact with the bright green of the vernal turf or the dark green of some broad-leaved evergreen plant. Several varieties of these Azaleas could be grown, no doubt, in this climate if a little care was taken in selecting sheltered positions for them and in furnishing a slight winter protection; and the experiment is certainly worth making. Azaleas in cultivation are all derived from plants cultivated originally by the Chinese in the southern part of the empire, or from the gardens of central and southern Japan. The so-called Indian Azalea, or some of its forms, grows far north in Japan in a climate as severe as that of New England. It is improbable that these northern forms have ever been introduced into our gardens, where they are possibly destined to give birth to a new race of garden Azaleas, which, there is every reason to believe, will prove as hardy and satisfactory here as have many other plants from the same region.